Abstract

The present invention is directed to a recombinant enzymes having alcohol and aldehyde dehydrogenase activity which comprises one or more recombinant polypeptides selected from the group consisting of polypeptides which are identified by SEQ ID NO 5, SEQ ID NO 6, SEQ ID NO 7, SEQ ID NO 8 and chimeric recombinant polypeptides that are a chimeric combination of at least two of the following amino acid sequences identified by SEQ ID NO 5, SEQ ID NO 6, SEQ ID NO 7, SEQ ID NO 8 and functional derivatives of the polypeptides identified above which contain addition, insertion, deletion and/or substitution of one or more amino acid residues, wherein said enzymatic polypeptides have said alcohol and aldehyde dehydrogenase activity. DNA molecules encoding the recombinant polypeptides, vectors comprising such DNA molecules, host cells transformed by such vectors and processes for the production of such recombinant enzymes are provided. Furthermore, the recombinant enzymes having alcohol and aldehyde dehydrogenase activity are used for obtaining aldehydes, ketones or carboxylic acids, and specifically, 2-keto-L-gulonic acid an intermediate for the production of L-ascorbic acid (vitamin C).